



VQ3110

SELF-POWERED
3-WAY REFERENCE
MONITOR

OWNER'S MANUAL

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1. Introduction

Thank you for purchasing your Quested VQ3110 monitor system.

You have purchased one of the finest monitors in the world. Take time and care in positioning and aligning the system and you will appreciate why Quested monitors have a reputation for accurate reproduction covering the entire audible spectrum.

Quested monitors are professional monitors, and therefore are not designed to flatter but reproduce precisely. Take care in maintaining the system and you will be rewarded by many years of faithful service.

Please read this manual, which we have kept as concise as possible, it really will help you and covers important safety considerations.

2. Safety Considerations

2.1. General

Before connecting your Questeds to the AC power supply, please read the following safety information.



CAUTION: RISK OF ELECTRICAL SHOCK. REFER SERVICING TO QUALIFIED PERSONNEL. THE POWER CORD MUST ALWAYS BE REMOVED BEFORE THE AMPLIFIER IS DISMANTLED.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

WARNING: THIS APPLIANCE MUST BE EARTHED

The cores in the supplied mains lead are colour coded in accordance with the following code:

GREEN AND YELLOW: EARTH

BLUE: NEUTRAL

BROWN: LIVE.

As the colours of these wires may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter 'E' or by the earth symbol, or coloured green and yellow.

The wire which is coloured blue must be connected to the terminal in the plug which is marked with the letter 'N' or coloured black.

The wire which is coloured brown must be connected to the terminal in the plug which is marked with the letter 'L' or coloured red.

In certain countries the power cord will be supplied with an integral moulded plug to satisfy national safety standards.

CAUTION: THE AMPLIFIER HOUSING OF THIS UNIT CAN REACH ELEVATED TEMPERATURES WHICH MAY FEEL HOT TO THE TOUCH.

CAUTION: THIS UNIT CONTAINS MAGNETIC COMPONENTS WHICH MAY AFFECT ADJACENT SUSCEPTIBLE EQUIPMENT.

2.2. Hearing damage

This equipment can deliver sound pressure levels in excess of 120dB. At this level, permanent hearing damage can occur and exposure to this level of sound, even for relatively short periods (see table below), can be harmful. Of equal importance to the maximum level of sound is the exposure to high levels of sound for extended periods. There are no international agreed limits and different countries have different limits measured in differing ways. **IT IS THEREFORE IMPORTANT THAT THE USER ESTABLISHES THE RECOMMENDED, AND IN SOME TERRITORIES, LEGAL LIMITS, THAT ARE IN PLACE.** As a guide, the table below shows the levels that are acceptable in the majority of Western Europe and the US & Canada.

dB(A) Listening time per day

90 - 8 hours

95 - 2.4 hours

100 - 40 minutes

105 - 15 minutes

110 - 5 minutes

115 and over - Not at all

It is also important to note that the effect of exposure to sound is cumulative. Having listened to sound, for example, for 15 minutes at 105 dB then further exposure to noise levels above 80dB should be avoided until the next day.

3. Unpacking

The packaging has been thoughtfully designed and tested to offer sufficient protection during transportation, yet remain fully recyclable and should be retained for possible future use.

4. Installation

4.1. Electrical connections

4.1.1 Safety Earthing

This product has been designed to comply with international safety standards. It is essential that the green/yellow core of the mains cable, or the ground pin of a 3 pin moulded plug, is connected to the electrical installation safety earth or ground. It is internally connected to all exposed metal surfaces and it is essential for personal safety as well as proper operation of the product. The audio signal input is electronically balanced and does not need the disconnection of any safety earth for the avoidance of hum loops.

4.1.2. Fuse Setting

The fuse has a simple job – to protect the unit in the event of a problem with the electrical supply. It is very unlikely the fuse will fail during normal use, but should this occur the situation must be approached with some caution. Check that the mains voltage setting is correct for your installation supply, and that the original fuse was the correct rating, see **8.2 Spares**. The fuse may blow if the unit is subjected to mains power surges or spikes, or if the mains wiring has any poor or faulty connections, in which case a qualified electrician should be consulted. Occasionally a fuse will become degraded after many years of service and simply replacing it with a new one will restore the system. The fuse is housed inside the IEC inlet connector (see rear panel drawing page of this manual). To gain access to the fuse, remove the power cord and unclip the fuse carrier using a flat blade. A spare fuse of the correct rating is also provided within the same carrier. If none of the above is the cause of the fault, it is possible that the unit has suffered an internal component failure and will need returning to a qualified agent for servicing. **IF THE REPLACEMENT FUSE SHOULD FAIL DISCONNECT FROM THE MAINS IMMEDIATELY AND HAVE THE UNIT PROFESSIONALLY REPAIRED BEFORE ATTEMPTING TO USE IT.**

4.1.3. Voltage Setting

The mains voltage for which the unit is configured is shown on the silver label above the IEC inlet connector. For the 230vAC setting the unit will perform to full specification over the range 230v to 263v and will also perform to full spec., except for a progressive reduction in power, down to 179v. Likewise for the 115vAC setting the unit will perform to full specification over the range 115v to 131v and will perform to full spec., except for a progressive reduction in power, down to 90v. At normal listening levels, the reduction in available power will not be noticed. If for any reason it is necessary to change the voltage setting, please contact Quested.

4.2. Positioning

The VQ3110 is designed to be mounted vertically or horizontally, either way the H.F. and M.F. drivers should have a vertical orientation to obtain the most accurate imaging. The H.F./M.F. baffle is easily rotated:

1. Remove the eight button-head screws with a 2.5mm hex driver. 2. Carefully lift the baffle from the cabinet, rotate to the desired position. "Pinching" the ports is an easy way to lift and rotate. 3. Replace the screws, making sure they are finger tight.

The VQ3110 is best used if positioned on speaker stands. The support should be rigid and must not vibrate when the monitor is driven. If the monitor is not supported solidly, performance will suffer severely, particularly at low frequencies which will sound muddy. Program material will lack definition, and punch.

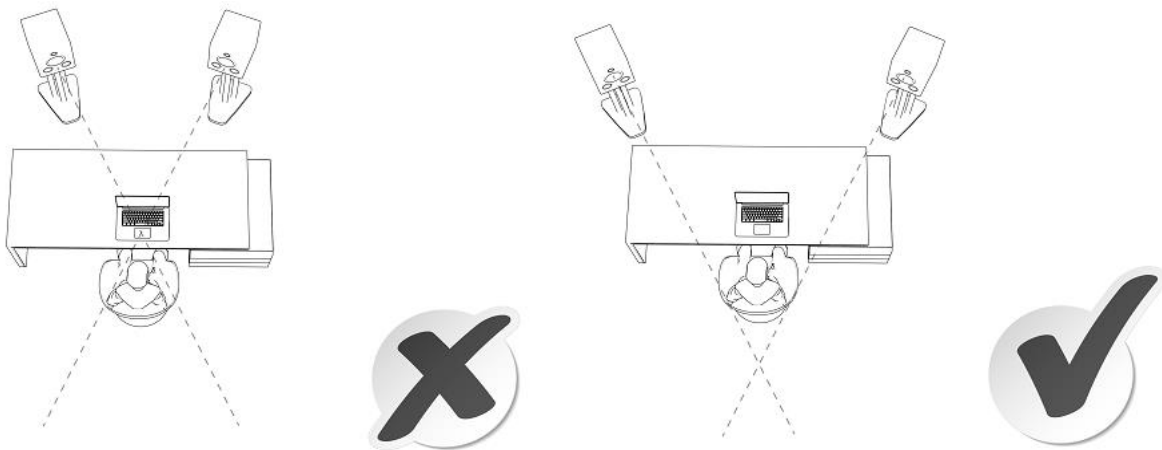
Positioning a speaker close to a wall will give a rise in bass response; this will be accentuated if it is in a corner. This problem can be remedied using the L.F. compensation control on the back of the amplifier. The VQ3110 positioning close to or away from the rear wall and proximity to any room corners is best determined by experimenting and placing the speaker in different positions. The shape of the room, normal listening position and room treatment will all have an effect on determining the speakers positioning. Placing the cabinet against a wall will reinforce the bass performance of the speaker and up to an additional 3dB may be obtained. Placing the monitors in a corner will further reinforce the bass performance and gains of up to 6dB may be achieved, but be very careful about sitting the monitors in a room corner because it can excite standing waves and create an unpleasant boominess.

IF THE OPTION OF SOFFIT MOUNTING IS CHOSEN, IT IS ESSENTIAL THAT ADEQUATE AIRFLOW IS PROVIDED BEHIND THE SOFFIT TO ENSURE THE AMPLIFIER IS ADEQUATELY COOLED. ALWAYS CONSULT QUESTED FIRST.

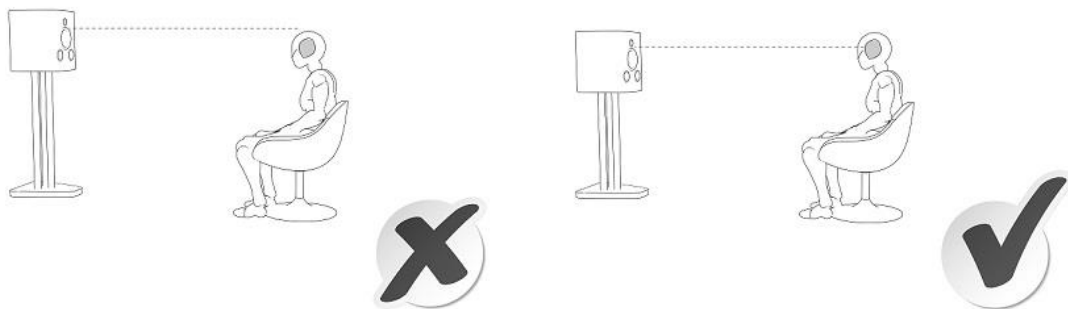
4.3. Aligning speakers

The speakers should be positioned so that the axis (an imaginary line drawn from the acoustic centre, the mid-range driver, of the left and right monitor - see line drawing on page 10 of this manual) should cross between 1/2 and 1 meter behind the engineer's position, for the following reasons:-

- a) To obtain the most accurate imaging, both front to rear and side to side, and to obtain as large as possible listening area so that the engineer can move and operate his equipment with the minimum change in character of the monitoring.
- b) To enable listening for long periods of time without suffering strain or fatigue.



The height of mounting the speaker is equally as important. The correct height should result in the axis being at ear level when the engineer is sitting in his normal position.



4.4. Audio connections

The audio signal input is RFI filtered and electronically balanced to ensure a high level of rejection for common mode interference signals and to give a professional connection to external equipment. It is essential for optimal use of these specifications that a professional grade balanced two core screened cable is used.

Source Balanced Pin 2 hot

In accordance with international standards 3 pin XLR style input connectors are utilised, with pin 2 being designated the 'in-phase' or 'hot' terminal and pin 3 the 'out of phase' or 'cold' terminal. Pin 1 is connected to the chassis ground and must be connected to the screen of the audio inter-connecting cable. This is necessary to ensure proper compliance with European Standards for Electromagnetic Compatibility. Pin 1 carries no signal voltages or currents and is provided purely for screening purposes. It should not be connected to either pin 2 or pin 3.

Source Unbalanced Pin 2 Hot

If the equipment providing the audio signal has an unbalanced output, then the interconnecting audio cable should be wired so the hot output of the source is connected to pin 2 of speaker input XLR and the ground of the source connected to pin 3. The screen of the interconnecting audio cable should be connected to pin 1 of the input connector only. There must be no connection between the ground connection of the unbalanced output and the pin 1 ground connection of the input connector.

Source Unbalanced Phono

If the source output is a phono socket then the centre pin of the phono plug should be wired to pin 2 of the speaker input XLR and the outer phono casing to pin 3. The wire from pin 1 of the XLR will not be connected to the terminals of the phono plug. Strict adherence to this will help to eliminate ground loop hums and RF break through.

5. OPERATIONAL CONSIDERATIONS

5.1. Mains On-Off Switching

ON/OFF switching is provided by a push switch mounted in the mid/hi baffle. Intelligent circuitry ensures noiseless power-on and power-off modes.

5.2. Thermal.

Two of the three internal power amplifiers will heat up and reach temperatures well above that of ambient. The design is such that no forced cooling is necessary provided a sufficient free space can be maintained around the monitor to allow air to circulate freely. The internal monitoring circuitry includes temperature sensing as part of its safe operating area. Should this detect unsafe temperatures, the amplifier will automatically shut off and the front panel LED indicator will show a red colour. Once temperatures have reached a safe operational level, the amplifier will automatically switch on again.

5.3. Signal Level.

Input sensitivity can be adjusted with the ten position rotary switch recessed in the rear panel by using a flat bladed screwdriver. The control has an 18dB range in 2dB steps and accurately sets the SPL level for a known input signal level. With the switch set at the 0dB position, 0dBu of pink noise will produce 100dB SPL at 1 meter.

5.4. Front Panel Indicator/Mains Power Switch

A two colour led indicator is combined into our front mounted Mains Power Switch. When mains power is connected and the amplifier switched on the LED will flash blue indicating the warm-up cycle. The flashing will change to constantly lit when the optimum operating temperature has been reached. The amplifier will warm up quicker with program running. If one or more of the power amplifiers is close to its maximum output power, the LED will change to red for the period of time that the input signal level is excessive. Should there be internal electronic faults, or overheating, the indicator will show permanent red and the audio signal will be muted until the amplifiers can return to a safe operating temperature.

5.5. Contour & Compensation Selectors.

Three sets of rear panel switches allow the high, mid and low frequency responses to be trimmed to adjust for room conditions or personal preference.

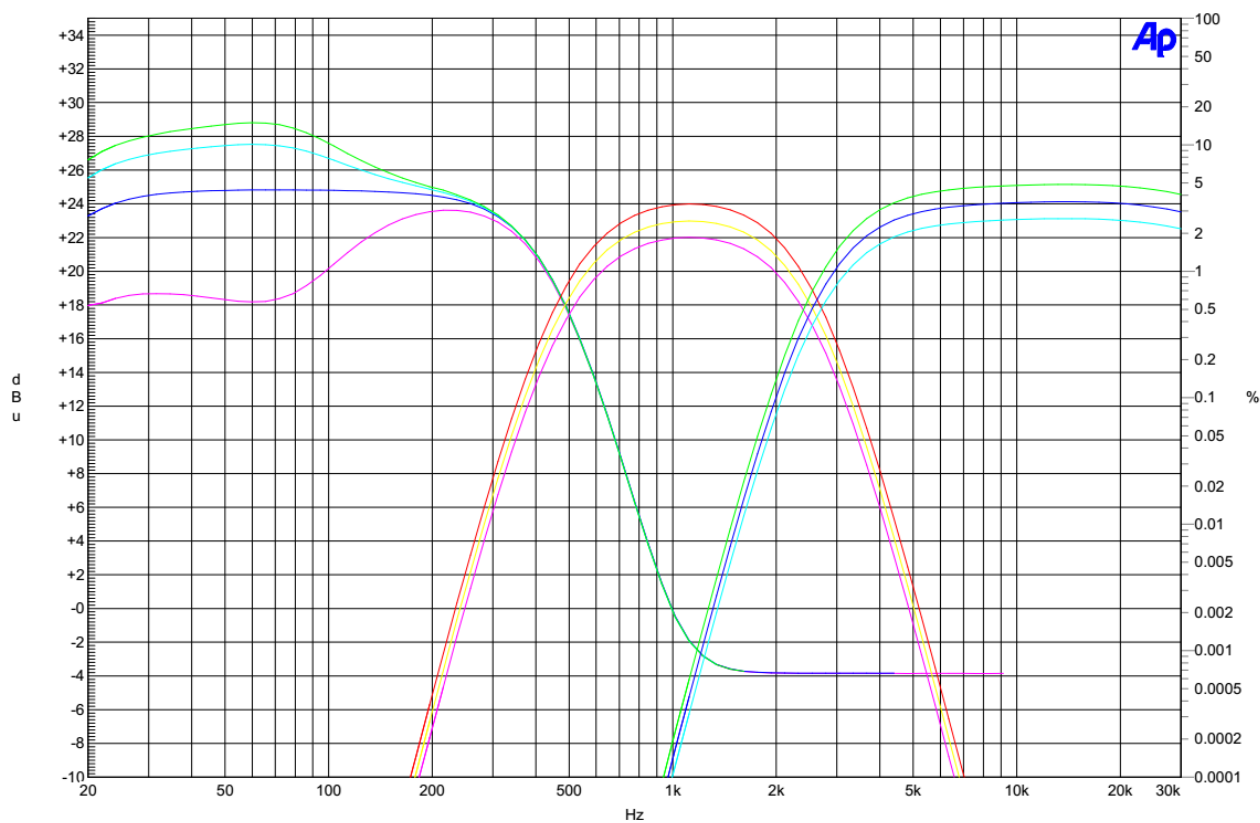
The 3 position HF CONTOUR switch should be set to flat for a nominally flat HF response. The +1dB/-1dB positions will increase or reduce the gain above 2.62kHz.

The 3 position MF CONTOUR switch should also be set to flat for a nominally flat mid response. The +1dB/-1dB positions will increase or reduce the gain between 457Hz and 2.62kHz.

The 4-position LF COMPENSATION switch should be set to 0dB for a nominally flat low frequency response. The -9dB position should be selected if an external subwoofer is employed. The lift and cut has a gradual effect over the frequency stated and can only be quoted as a nominal value.

5.6. Frequency Plot

Generated from AP reference sweeps



6. Technical Specification

Size: (w x h x d) 380 x 600 x 360mm (15" x 23.75" x 14.25")

Weight: 41kgs (90.3lbs)

Driver: Low Frequency 1 x 250mm(10") LF

Mid 1 x 75mm (3") soft dome

High Frequency soft dome 1 x 28mm (1 1/8")

Maximum Continuous SPL: 116.5dB.

Frequency Response: 34Hz - 20kHz $\pm$ 2dB

INPUT

Connector: XLR3 type-Female

Impedance: 10k Electronically balanced with RF filters

Wiring: Pin 1 ground, Pin 2 hot, Pin 3 cold

Sensitivity: Rear mounted 10 position rotary switch calibrated in 2dB steps

Minimum sensitivity +4dBu for 100dB SPL @ 1m

Maximum sensitivity -14dBu for 100 dB SPL @ 1m

FILTERS

Subsonic: -3dB @ 14Hz, 24dB/oct

Crossover Points: 457Hz, 2.62kHz, 24dB/oct.

User LF EQ: 4 position rear mounted selector to select FLAT for normal use. -9dB and -3dB for cut below 100Hz, +1dB for lift below 80Hz.

User MF EQ 3 position rear mounted switch to select FLAT for normal use, CUT/LIFT $\pm$ 1dB for 457Hz to 2.62kHz.

User HF EQ 3 position rear mounted switch to select FLAT for normal use, CUT/LIFT $\pm$ 1dB for 2.62kHz to 20kHz.

POWER AMPLIFIERS

LF output power: > 700W rms continuous (note 1)

Mid Output > 200W rms continuous (note 1)

HF output power > 200W rms continuous (note 1)

THD < 0.03% at levels up to 1dB below clip, 20Hz - 20kHz. typ 0.005% @ 20W rms 1kHz.

Hum + Noise > -100dB referred to clip

note 1: The continuous rating is for a period not exceeding 5 minutes with unrestricted airflow (100mm clearance) around the amplifier rear panel and ambient temperatures is <30°C

INDICATION

Power on: Front mounted mains switch/LED (flashing blue) indicates power applied and warm-up cycle.

Optimum Performance: Front mounted mains switch/LED lights constant blue.

Overload: Front mounted LED flashes red 2dB below signal clip.

Thermal Protection: Front mounted LED turns red, signal is muted and amplifier switches to standby mode during thermal protection cooling cycle. Normal operation resumes when amplifier temperature drops by 20°C.

POWER REQUIREMENTS

Voltage: Set by internal plugs: nominal 115V or 230V @ 50-60Hz AC.

230V setting: Min 160V (restricted output power): Max 263V

115V setting: Min 80V (restricted output power): Max 132V

CONSUMPTION Quiescent 72W, typical use 110W, Max 195W

Note 0dBu = 775mV into open circuit.

This product is built to conform to the requirements for CE marking.

7. Guarantee



The VQ3110 is guaranteed for 5 years from its date of purchase. If you look after the monitor, as outlined in this manual, you will get many years of great service, and hopefully great mixes. If any part of the product is found defective due to faulty manufacture though, within 5 years from the date of purchase, Quested, through its authorised distribution network, will effect repair or replacement, at its discretion, free of charge providing:-

- a) The fault is reported to the authorised distributor.
- b) Proof of purchase is provided.
- c) The fault is not caused by, misuse, neglect, or faulty operation by the user.
- d) The fault is not a result of fair wear & tear
- e) The equipment has not been modified in any way.
- f) The equipment has not been taken apart or tampered with in any way other than described in the service manual for the adjustment and replacement of user accessible items.

The guarantee does not cover

- a) Damage during transit
- b) Damage to diaphragms, cones and other speaker parts as a result of the over-driving of the monitors or by faulty installation or connection.
- c) Damage caused by incorrect installation or during installation caused by incorrect handling.
- d) The cost of carriage to or from the authorised repairer.

If you have any concerns about the performance of the VQ3110, please contact your local Quested Distributor and get some advice.

8. Appendix

8.1. Accessories

Accessory Part Number

Stands – please contact your local distributor for advice and pricing on Quested stands.

8.2. Spares

Spare part Description Part Number

LS25007 250mm (10") Loudspeaker (W001005)
TW35 28mm (11/8") soft dome (TWE0035)
MD3SD150 75mm (3") mid-range soft dome (MID0302)
RD35 28mm (11/8") soft dome diaphragm (DIA0035)
230v fuse 20mm T5 amp
115v fuse 20mm T10 amp

8.3 Driver replacement procedures

8.3.1 Tweeter and tweeter diaphragm

The tweeter is secured by 6x M3 machine screws. Remove these with a 2mm hex driver no. Take out the tweeter and disconnect the two wires, noting which colour goes to which terminal.

If it is necessary to replace the diaphragm

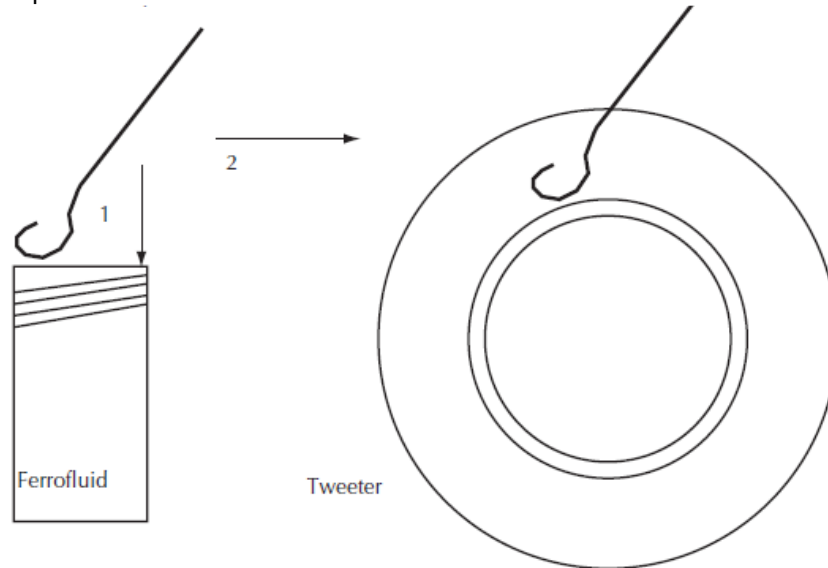
- a) Remove the 3 machine screws on the front plate of the tweeter using a 2mm hex driver.
- b) De-solder and unwind wires from the terminal tags
- c) Remove diaphragm assembly and replace with the new diaphragm. The Ferrofluid has the appearance of oil and is dark brown in colour and should cover about 1/3 of the coil. If there is less than this then additional Ferrofluid should be added. This can be obtained from your dealer/distributor or directly from Quested.

It should be noted that ferrofluid is best added as shown in the diagram below. The fluid should never cover more than 1/2 the coil.

- d) Wrap the wires from the diaphragm around the corresponding tags
- e) Keep the wire slightly taught, but do not strain
- f) Re-solder the wires and re-assemble.

Ferrofluid

Wire with curved loop formed at one end



Dip wire in ferrofluid, a small amount will be retained on the wire. Hold wire over the tweeter gap and the magnet will attract the fluid from the wire into the gap. Do this 3 or 4 times in different positions on the tweeter, then check by inserting the new diaphragm to see the amount of fluid in the tweeter.

8.3.2 Mid-range driver

The mid-range driver is secured to the mid/hi baffle by 4x M5 machine screws. The driver is rear mounted and the mid/hi baffle must be removed in order to change the driver or to access it for successful diaphragm replacement. If it is necessary to replace the mid-range

- a) Position the monitor on its rear panel, drivers facing up.
- b) Using a 2.5mm hex driver, loosen and remove the 8x M4 machine screws which secure the baffle to the cabinet.
- c) Have a piece of cloth or cardboard to hand. Lift up the mid/hi baffle and rest the back of the mid-range on the cloth/cardboard. On one of the top front corners is best for this.
- d) Loosen and remove the 4x M5 machine screws which hold the mid-range to the baffle.
- e) Disconnect the speaker wires (noting which colour goes where).
- f) In the event the mid-range diaphragm is to be replaced. Set the driver down and loosen and remove the 4x M5 machine screws located in the flange section.
- g) Lift off the flange section outer.
- h) Remove another set of 4x M5 machine screws. This will free up the diaphragm assembly to be removed and replaced.

8.3.3 Bass driver and bass driver recone

The bass driver is held in by four M5 machine screws. Remove the screws in the order shown below using a 4mm hex driver. The driver is heavy so hold the driver by the frame when removing the last screw. Remove the bass driver, using a screwdriver in one of the screw holes to gently lever out the driver if there is any difficulty in removing the unit. Do not force a blade between the cabinet and driver. Disconnect the two wires, noting which colour goes to which terminal. Replace with the new driver and re-assemble in the reverse order. A recone unit is available for the VQ3110 bass driver. Instruction for reconing is included with the recone kit. However, unless you are familiar with the practice of reconing it is better to have the speaker reconed by someone who is experienced.

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